

What is claimed is:

1. Product packaging apparatus comprising:

a support having a front face and a rear face and having top and bottom edges and left and right side edges;

the support having at least one recess in the bottom edge and at least one recess in the top edge; and

wrapping film received in said recesses and stretched around said support between said recesses for enveloping a portion of the product to be packaged and a portion of the support and for securing the product to the support in a position of the product within the perimeter of the support.

2. The apparatus of claim 1 and wherein:

said support is made of a generally rectangular blank of corrugated fiberboard having a front face sheet and a rear face sheet and a corrugated inner sheet,

the blank has means on it for correctly locating the product on it;

the blank has a first plurality of cuts in the bottom edge and forming bottom tabs,

the tabs are bent in a direction from the rear face sheet toward the front face sheet thereby producing the said at least one recess and producing another recess in the bottom edge, the recesses being in the form of notches in the bottom edge with the tabs providing support ledges for the product to be packaged; and

said wrapping film is engaged with said tabs as said film is stretched around said support and tabs.

3. The apparatus of claim 1 and wherein:

said support is a material sheet resistant to bending about axes parallel to a line containing said bottom edge.

4. The apparatus of claim 1 and wherein:

said support is made of a generally rectangular blank of corrugated fiberboard having a front face sheet and a rear face sheet and a corrugated inner sheet;

the blank has a first plurality of cuts in the bottom edge and forming bottom tabs;

the tabs are bent in a direction from the rear face sheet toward the front face sheet thereby producing the said at least one recess and producing another recess in the bottom edge, the recesses being in the form of notches in the bottom edge with the tabs providing support ledges for the product to be packaged; and

said wrapping film is engaged with said tabs as said film is stretched around said support and tabs.

5. The apparatus of claim 1 and wherein:

said support is made of material which is resistant to bending about axes parallel to a line containing said bottom edge and which is resistant to bending about axes perpendicular to said line containing said bottom edge.

6. The apparatus of claim 5 and further comprising:

at least one recess in each of said side edges; and

wrapping film received in said recesses in said side edges and stretched and wrapped around said support for further enveloping a portion of said support and the product.

7. The packaging apparatus of claim 1 and wherein:  
said wrapping film is a plastic film for stretch wrapping around a front face of the product and through said recesses and around the rear face of said support.
8. The apparatus of claim 1 and further comprising:  
a fragile material product suspended on said support and having said film stretch wrapping said product snug against said front face of the support, the product having a perimeter, and the support having a perimeter, and the film suspending the product so that the perimeter of the product is within the perimeter of the support.
9. The apparatus of claim 8 and wherein:  
said product is a curved glass panel.
10. The apparatus of claim 8 and wherein:  
said panel is a window for a vehicle.
11. A package comprising:  
a product to be protected and having at least some edge portions vulnerable to damage during handling and shipping;  
a support having a front face and a rear face, and having a perimeter including top and bottom edges and left and right side edges of the support; and  
stretch wrapping film stretched around said support between said top and bottom edges and enveloping a portion of the product and a portion of the support and securing the product to the front face of the support in a position of the product within the perimeter of the support.

12. The package of claim 11 and wherein:

each of the top and bottom edges of the support includes at least one notch, and said wrapping film is stretched between said notch in the bottom edge and said notch in the top edge and envelops a portion of the product and the support and fixes the product to the support and spaces the product inboard from said edges of said support.

13. The package of claim 11 and wherein:

the support has ledges formed of the material of said support and projecting in a direction from the rear face toward the front face near the bottom edge of the support, and the ledges support the product.

14. The package of claim 13 and wherein:

said support is made of corrugated fiberboard and said ledges are tabs formed from cuts in the bottom edge of the support and bent in a direction from the rear face of the support toward the front face of the support whereby notches are formed in the bottom edge of said support; and

the wrapping film is plastic film stretch wrapped around a front face of said product and through said notches and around said tabs and around the rear face of said support.

15. The apparatus of claim 14 and wherein:

said product has maximum x-axis, y-axis and z-axis dimensions, each of the maximum x-axis and y-axis dimensions being greater than the maximum z-axis dimension.

16. The apparatus of claim 14 and wherein:

said product has at least some portions of said edges made of a fragile material.

17. The apparatus of claim 16 and wherein:  
said product is a curved glass product.
18. The apparatus of claim 17 and wherein:  
said product is a window for a vehicle.
19. A package comprising:  
a product having an edge forming an outer perimeter defining a product face area, the product having some frangible material along at least a portion of the edge;  
a support behind said product and having a front face and a rear face, and having an edge forming an outer perimeter defining an area larger than the product face area; and  
plastic film stretch wrapped around the support and the product and fixing the product to the support with the perimeter of the support outboard of and surrounding the perimeter of the product throughout the entire length of the perimeter of the support.
20. The package of claim 19 and wherein:  
the support is a generally rectangular blank of corrugated fiberboard.
21. The package of claim 19 and wherein:  
the edge of the support has upper and lower edge portions, and recesses in the upper and lower edge portions; and  
the film is received in the recesses and wrapped around the front of the product and the rear of the support.
22. The package of claim 21 and wherein:  
the edge of the support has left side and right side edge portions, and recesses in the left side and right side edge portions; and

plastic film is received in the recesses in the left side and right side edge portions and is stretch wrapped around the front of the product, through the recesses and around the rear of the support.

23. A package comprising:

a cargo product having front and back surfaces and an outer edge with at least portions of the edge being made of a frangible material;

a support product having a front surface receiving and supporting at least a portion of the back surface of said cargo product, and

the support having projections forward from said front surface of said support and receiving portions of the outer edge of said cargo product; and

stretch wrapping material securing said cargo product to said support and located against said projections.

24. A package comprising:

a product to be protected and having a front surface and having some exterior corners;

a support pad having top and bottom edges and left and right side edges and having sufficient vertical column strength from top to bottom to support the product without deforming; and

a stretch wrapping film wrapped around the support and the product and securing the product to the support pad to prevent movement of the product relative to the support pad.

25. The package of claim 24 and wherein:

the support pad has a perimeter; and

the product has a perimeter;

the perimeter of the product lying within the perimeter of the support pad.

26. The package of claim 25 and wherein:

the bottom edge of the support pad has at least two points on a straight line for stable mounting of the bottom edge of the support on the bottom of a shipping container.

27. The package of claim 26 and wherein:

each side edge of the support pad has at least one point engageable with an upstanding wall of a shipping container for locating the support pad within said container.

28. The package of claim 27 and wherein:

said top edge of said support pad has at least two recesses in it, and the bottom edge of said support pad has at least two recesses in it; and

the stretch wrapping film is stretch wrapped around one of the recesses in the top edge and around the front of said product and down and around one of said recesses at the bottom edge and up around the back of the support pad and around a portion of said top edge of said support pad and down around the front of the product and support pad to said bottom edge and back up around the back of the support pad and around said second recess on the top edge of the support pad and down to and around the second recess at the bottom edge of said support pad and up around the back of the support pad and is secured to a portion of the film on the back of the support pad.

29. The package of claim 26 and wherein:

the stretch wrapping film is stretch-wrapped around the front of the product and around a side edge of the support pad to the back of the support pad and around the back of the support pad to the opposite side edge of the support pad and back around the front of the

support pad and the product and again around to the back of the support pad and snugly secures the product to the support pad.

30. The package of claim 26 and wherein:

the support pad has means for locating the product on the front face of the support pad;  
and

the perimeter of the product is within said means for locating.

31. The package of claim 30 and wherein:

the product has a perimeter edge;  
the support pad has a perimeter edge; and  
the entire perimeter edge of the product is within the perimeter edge of the support pad.

32. The package of claim 31 and wherein:

the product has dimensions in x-axis and y-axis and z-axis directions, and the maximum x-axis dimension and the maximum y-axis dimension are each greater than the maximum z-axis dimension.

33. The package of claim 24 and wherein the support pad includes a hand hole.

34. A cargo shipping apparatus comprising:

a container having a bottom tray and a top lid, the tray having a rectangular bottom surface and upstanding parallel sidewalls and upstanding parallel end walls;

the lid having a rectangular top and parallel sidewalls and parallel end walls projecting downward from the top;

at least a pair of holes in each of the sidewalls of the tray at the bottom of the tray;



a plurality of product containing packages received in the tray, the packages having bottom edges supported by the bottom of the tray and having side edges proximate the end walls of the tray;

the packages having notches in the bottom edges aligned with said holes in the sidewalls of the tray and forming passageways in the container for accommodating lifting forks of a fork lift truck to lift the container loaded with the packages in the container and transport the loaded container from one location to another.

35. The apparatus of claim 34 and wherein:

the lid is received on the tray and secured to it.

36. The apparatus of claim 35 and further comprising:

banding securing the lid to the tray, the banding extending through said passageways and under the support pads in the tray and up portions of the sidewalls of the tray and the lid and across the top of the lid to secure the lid to the tray and packages in the tray.

37. The apparatus of claim 35 and further comprising:

channels received in said passageways between the sidewalls of the tray.

38. The apparatus of claim 37 and wherein:

said channels are downwardly opening.

39. A method of packaging a three dimensional product comprising:

mounting the product to a support pad having front and back faces and top and bottom edges and left side and right side edges, with the product being mounted within the area bounded by said edges; and

wrapping stretch wrap material around a front of the product and the top and bottom edges of the pad and the back of the pad and thereby fixing the product to the pad within an area bounded by said edges.

40. The method of claim 39 and wherein the pad has a perimeter defined by said edges, the method further comprising:

mounting the product entirely within the perimeter of the pad.

41. A method of loading a container which has an upwardly opening box tray having a bottom and parallel sides upstanding from the bottom, the method comprising:

placing a plurality of packages made according to the method of claim 39 into the tray, with the packages standing upright on bottom edges of the support pads of the packages positioned at the said tray bottom.

42. The method of claim 41 and wherein said packages have a non-planar profile with a front portion, the method further comprising:

nesting together the packages of a first half of the total of said packages, with their front portions facing in one direction in the tray; and

nesting together the packages of a second half of the total of said packages, with their front portions facing in the opposite direction.

43. The method of claim 42 and wherein said package profile is semi-cylindrical, the front portion being convex, the method further comprising:

placing the packages with the front portions of the packages facing toward a location midway between the sides of the tray.

44. The method of claim 41 and further comprising:  
providing downwardly opening notches in the bottom edges of said pads;  
aligning said notches in said tray for providing passageways from one of said sides of  
the tray to the other side of the tray; and  
lifting the loaded container by entering said passageways with lifting forks of a lift  
truck and raising the forks for transporting the loaded container from one location to another.